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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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09/611,230 07/06/00 BARBERIS

D Q-59991

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| EXAMINER |
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PM82/0710
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| BURCH, M | |
| ART UNIT | PAPER NUMBER |

3613
DATE MAILED:

3
07/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/611,230

Applicant(s)

BARBERIS ET AL.

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2000 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: element 110' on pg. 9 line 2. Correction is required.
2. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect can be deferred until the application is allowed by the examiner.

Specification

3. The abstract of the disclosure is objected to because the use of claim language such as "said" is improper. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities:
 - Throughout the specification Applicant has failed to provide the appropriate headings particular to U.S. Patent Format such "Summary of the Invention", etc.;
 - On pg. 5 line 5 from the bottom "on board" should be changed to --on-board--;
 - On pg. 9 line 1 "6" should be changed to --6'--;
 - On pg. 9 line 11 from the bottom the use of claim terminology "said" is improper;
 - On pg. 10 line 12 from the bottom "provisional line 6'" should be changed to --provisional line 16--.

Appropriate correction is required.

Claim Objections

5. Claims 1-11 are objected to because of the following informalities: Throughout the claims Applicant uses the phrase "the said". Examiner advises using either "the" or "said" instead of both terms.

Re: claim 1. In line 8 from the bottom "communicated" should be changed to --communicate--;

Re: claim 1. In line 4 --the communication and control system-- should be inserted before "comprising";

Re: claims 2-11 "A" in line 1 of the claims should be changed to --The--;

Re: claim 7. In the last line of the claim "this" should be changed to --the--.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claims 1-11. It is unclear to the Examiner whether the Applicant is claiming the combination of a communication and control system and a railway train and its components or the subcombination of a communication and control system and its components. The train, engine, and the carriages or wagons that make up the train are

recited as functional language in the preamble but are positively recited in the body of the claim.

Re: claims 1-11. Since there are two types of control units, Applicant is advised to make a clear distinction between the two to avoid confusion. Applicant is also advised to use consistent terminology when referring to the different control unit types. For example in claim 1 the main control unit is initially referred to as "a control unit operating as a main unit" as claimed in line 8. Later in the claim, however, the unit is called "the main control unit. Similarly, in line 12 of claim 1 Applicant refers to "*a plurality of slave control units*". Then in line 18 Applicant claims "*the slave control unit*".

Re: claim 2. The difference between the "lead or main engine" of claim 2 line 2 and the "at least one main engine" of claim 1 line 2 is unclear to the Examiner.

Re: claim 3. The difference between the "brake control signals" of claim 3 line 2 and the "brake command signals" of claim 1 line 4 from the bottom is unclear to the Examiner.

Re: claim 5. The difference between the "failure" of claim 5 line 2 and the "failure" of claim 4 line 3 is unclear to the Examiner. Examiner suggests changing "a failure" in line 2 of claim 5 to --the failure--.

Re: claim 6. Since there are two types of signals, Applicant is advised to make a clear distinction between the two to avoid confusion. Brake command signals are claimed in claim 1 and a transfer command signal is introduced in claim 6. Therefore, the phrase "transmit signals" in line 2 of claim 6 is unclear to the Examiner.

Re: claims 6, 8, and 11. The term "they" in line 4 of the claims is unclear. It is unclear to the Examiner whether Applicant is referring to the slave control units or the transmission lines.

Re: claim 11. Claim 11 recites the limitation "said provisional transmission line" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 3, 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morihara in view of Fujioka et al. Morihara shows in figure 1 a communication and control system for a railway train which comprises at least one main engine 1 and a plurality of carriages or wagons 2, the system comprising: first 5 and second 14 bi-directional transmission lines which extend parallel to and spaced from one another along the train, a main control unit 3,8 installed on the main engine and connected to both the transmission lines and to brake control systems or devices 9 of the train; a plurality of slave control units 4 each of which is installed upon a respective carriage or wagon and is connected in the respective carriage or wagon to both the transmission lines to a sensor device associated with the carriage or wagon as disclosed in col. 3

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lines 25-26; the main control unit 3,8 and the slave control unit 4 being arranged to communicate with one another via the transmission lines 5,14 according to a predetermined serial protocol as disclosed in col. 3 lines 20-21; the main control unit 3 being arranged to transmit to the slave control unit brake command signals of serial type and to receive and acquire information or state signals likewise of serial type from the slave control units via at least one of the transmission lines a means for detection of failure disclosed in col. 5 lines 27-30., but does not include the limitations of the solenoid valve units associated with the pneumatic brake actuators and the specific occurrence of two sensor devices associated with the carriage or wagon.

Fujioka et al. teach the well-known use of solenoid valve units associated with brake actuators. Solenoid valves are conventionally used in association with brake actuators for improved switching speeds and widespread availability. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the brake actuators of Morihara with solenoid valve units, as taught by Fujioka et al., in order to provide a means of reliably controlling brake pressure to the brake cylinders.

Also, Morihara teaches in the use of plural measuring sensors (which includes the limitation of 2 sensor devices) in connection with the transmission terminals. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the sensor device to include two sensor devices in order to provide a level of redundancy in the system for the purposes of reliability.

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10. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morihara in view of Fujioka et al. as applied to claim 1 above, and further in view of Engle et al. Engle et al. teach in figure 2 the use of a lead or main engine 26 and at least one further auxiliary engine 28, the auxiliary engine 28 being also provided with a control unit 68 capable of acting as a slave unit and arranged to receive synchronization signals coming from the control unit of the lead engine and to transmit information or state signals to the control unit of the lead engine via at least one of the transmission lines. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Morihara, as modified, to include an auxiliary engine, as taught by Engle et al., in order to provide a level of redundancy in the system which would ensure system control even in the case of main engine failure.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morihara in view of Fujioka et al. as applied to claim 1 above, and further in view of GB-2312260. Morihara is silent as to how the system is powered. GB-2312260 teaches in figure 1 the use of electrical power supply devices Bat. 1 and Bat. 2 to distribute power. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Morihara with electrical power supply devices, as taught by GB-2312260, in order to provide a means of driving the control system.

12. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morihara in view of Fujioka et al. as applied to claim 1 above, and further in view of Hsien et al. Hsien et al. teach in figure 2 the use of a control system wherein slave control units 20 disclosed in col. 2 lines 50-51 for the devices 21'-24' are arranged to

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acquire and transmit signals on one or the other transmission line 31,32 equally, and are moreover operable when they receive a transfer command signal to transfer to the other transmission line signals received on one line, the main control unit 10 being arranged to detect a condition in which the transmission lines 31,32 are both interrupted each between different pairs of slave control units and in such a case to send transfer command signal to at least two slave control units from among those in which there is an interruption of one of the transmission lines in such a way that all the slave control units are able to communicate with the main control units via a provisional transmission line comprising portions of both the transmission lines 31,32 and the slave control units 20 which have been sent the transfer command signal as disclosed in abstract lines 2-4 from the bottom.

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morihara in view of Fujioka et al. as applied to claim 1 above, and further in view of Hsien et al. and Larsen. Hsien et al. teach a control system comprising the use of lines operable to transmit electrical power and control signals simultaneously in col. 2 lines 49-53 with regards to the use of power line carrier communication technology and in col. 3 lines 51-53. Larsen teaches in col. 4 lines 62-63 the use of a travelling wave type transmission line.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the transmission lines of Morihara, as modified, to transmit both power and control signals simultaneously, as taught by Hsien et al., in order to reduce the number of lines needed in the system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the transmission lines of Morihara, as modified, to be of the travelling wave type, as taught by Larsen, in order to provide an alternate means of transmitting signals from the main control unit to the slave control units.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the lines of Morihara, as modified, to be twin wires which is a well-known line construction, in order to provide improved structural integrity of the lines.

14. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morihara in view of Fujioka et al. in view of GB-2312260 as applied to claim 7 above, and further in view of Hsien et al. See paragraph 12 regarding the rejections of claims 6 and 8.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents: 3651765 to Grundy, 5722736 to Cook, 5638276 to Hart, 4056286 to Burkett, 5730504 to Gaughan, 5746484 to Gaughan et al., 5927822 to Hart, and European Patent EP-0958980 teach similar inventions.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

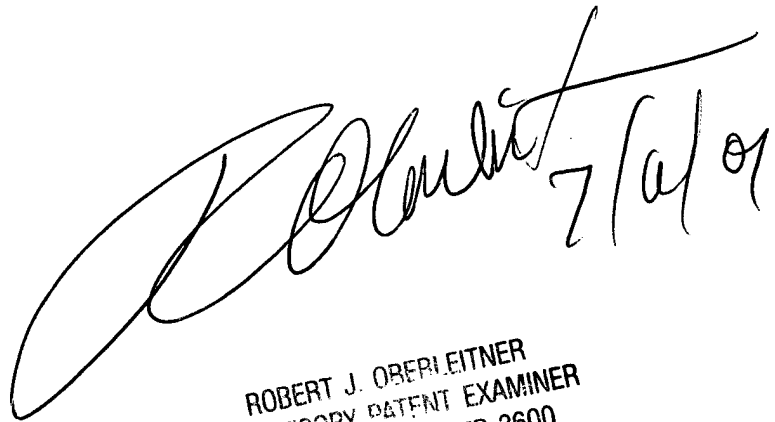
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Oberleitner can be reached on 703-308-2569. The fax phone numbers for the organization where this application or proceeding is assigned are 703-

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305-7687 for regular communications and 703-305-7687 for After Final communications.

17. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

mmb
July 5, 2001

A handwritten signature in black ink, appearing to read "Robert J. Oberleitner", followed by the date "7/5/01". The signature is written in a cursive, flowing style.

ROBERT J. OBERLEITNER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600